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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,557	03/31/2004	Joseph E. Paganessi	Serie 6390	4106
<div>7590 Linda K. Russell Patent Counsel Air Liquide 2700 Post Oak Blvd., Suite 1800 Houston, TX 77056</div>			<div>EXAMINER MERKLING, MATTHEW J</div>	
			<div>ART UNIT 1797</div>	<div>PAPER NUMBER</div>
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/813,557	<b>Applicant(s)</b> PAGANESSI ET AL.	
	<b>Examiner</b> Matthew J. Merkling	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-12 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12, 14-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 18 is objected to because of the following informalities: The phrase "prior to" in line 1 appears to be a typographical error as the same phrase immediately follows it.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1, 5-9 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Bingham, GB 600619A.

Regarding claims 1, 5 and 19, Bingham discloses acetylene generation and supply system comprising (Fig. 1): an acetylene generation device (a) configured to generate acetylene from at least one reactant feed stream including at least one carbon containing material (calcium carbide, P3/L76-90); and an acetylene processing device (r, s) (Fig. 1) oriented in-line and downstream from the acetylene generation device to receive and process generated acetylene from the acetylene generation device so as to consume

at least a portion of the generated acetylene upon operation of the acetylene processing device (P4/L29-40, Fig. 1).

Regarding claim 6, Bingham further discloses at least one storage cylinder (f) connectable with the acetylene generation device (a) to received and store acetylene generated by the acetylene generation device (Fig. 1).

Regarding claim 7, Bingham further discloses the at least one storage cylinder is free of acetone (purifier e removes impurities, P3/L100-105).

Regarding claim 8, Bingham further discloses the at least one storage cylinder (f) is disposed in-line between the acetylene generation device (a) and the acetylene processing device (P4/L29-40, Fig. 1).

Regarding claim 9, Bingham further discloses a purification unit (e, Fig 1) disposed in-line between the acetylene generation device (a) and the acetylene processing device (P2/L52-56, Fig. 1) or directing the generated acetylene through at least one purification unit prior to directing the generated acetylene to an acetylene processing device (P4/L29-40).

Regarding limitations recited in claims 1, 5, 7 and 19 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP §2114 and 2115. Further, process limitations do not have a patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to

an intended operation are of no significance in determining patentability of the apparatus claim.

4. Claims 1, 2, 10, 11 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fey (US 4,105,888).

Regarding claims 1, 10 and 14, Fey discloses a method of generating and supplying acetylene (see abstract), comprising:

generating acetylene in an acetylene generation device (see abstract, Fig. 1) by directing at least one reactant feed stream including at least one carbon containing material into the acetylene generation device (C3/L52-65);

directing the generated acetylene to an acetylene processing device disposed in-line and downstream from the acetylene generation device (such as being used for production of vinyl chloride, C1/L13-24); and

operating the acetylene processing device to consume at least a portion of the acetylene (inherently from the production of vinyl chloride), wherein the at least one carbon containing material is at least one of natural gas, methane and C2-C8 alkyl and/or aryl hydrocarbons (C3/L52-65).

Regarding claims 2 and 11, Fey discloses an acetylene generation device (Fig. 1) comprising an arc plasma reactor (C3/L14-28) having an anode and cathode (C3/L29-44) to generate plasma within the reactor or the acetylene is generated by generating plasma within the reactor (Fig. 1) via a power supply connected to the anode and the cathode (C2/L65-C3/L5).

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fey (US 4,105,888) in view of Kubota, (US 5,702,540).

Regarding claims 3 and 12, Fey discloses all of the limitations as applied to claims 1 and 10 above, but does not disclose wherein the process device comprises a carburization device including at least one chamber to receive and process steel components, the carburization device being configured to perform a carburization process including heat treating and quenching the steel components or wherein the process device comprises a carburization device, and operation of the carburization device comprises: receiving and heat treating steel components within at least one chamber of the carburization

device; introducing the generated acetylene into the at least one chamber to facilitate absorption and diffusion of carbon at the steel components.

Kubota discloses wherein a process device (Fig. 1) comprises a carburization device 1 including at least one chamber to receive and process steel components (Fig. 1), the carburization device being configured to perform a carburization process including heat treating and quenching the steel components or wherein the process device comprises a carburization device, and operation of the carburization device comprises (C3/L37-44) or receiving and heat treating steel components within at least one chamber of the carburization device 1 (Fig. 1, C3/L37-44); and introducing the generated acetylene into the at least one chamber to facilitate absorption and diffusion of carbon at the steel components (C3/L37-44), and it would have been obvious to one of ordinary skill at the time of the invention to modify Fey with Kubota as a mere substitution of an end use of the acetylene gas produced for the known use of carburizing steel (C1/L11-20).

8. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fey (US 4,105,888) in view of Hook et al. (US 5,960,634) as evidenced by Poor (US 7,033,446).

Regarding claims 15-18, Fey, as set forth in claims 1 and 10 above, does not go into depth as to the specific end use of the acetylene (such as with carburization, as discussed above). Moreover, Fey does not teach prior to directing the generated acetylene to an acetylene processing device and a purification device, storing the generated acetylene in at least one storage

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cylinder, wherein the at least one storage cylinder is disposed in-line between the acetylene generation device and the acetylene processing device and wherein the at least one storage cylinder is free of acetone.

Hook also discloses a method and apparatus for processing of acetylene (col. 2 lines 18-22). Hook teaches storing acetylene in a storage vessel (such as a cylinder) which is free of acetone (which is preferable when acetylene is used in a carburizer due to negative effects of oxygen in a carburizing processing device, see Poor, col. 6 lines 51-54) prior to utilizing the acetylene in a processing device (such as a carburizer) and also discloses a acetylene purification device (7, separates nitrogen from acetylene, col. 2 lines 25-44) prior to the processing device.

As such it would have been obvious to one of ordinary skill, to incorporate the method and apparatus for handling acetylene (as disclosed in Hook) in the generating and supplying method of Fey as a preferable way of safely storing (without acetone, but also not as dangerous as pure acetylene in a cylinder) acetylene prior to utilizing the acetylene in a processing device (such as a carburizer).

### ***Response to Arguments***

#### **Claim Objections**

9. The objection to claim 12 is withdrawn in light of the amendment.

#### **Prior Art Rejections**



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10. Applicant's arguments with respect to claims 1-3, 5-12 and 14-19 have been considered but are moot in view of the new ground(s) of rejection.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Merkling whose telephone number is (571) 272-9813. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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